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REMARKS

Claims 1-8, 10, 12-23, 25 and 27-46 are pending in the application. Applicant appreciates the Examiner's indication of allowable subject matter in claims 10, 12-15, 25 and 27-34.

Claims 1-8, 16-23 and 35-46 stand rejected under 35 U.S.C. § 103(a) as allegedly being patentable over U.S. Patent No. 4,716,573 ("Bergstrom et al.") in view of U.S. Patent No. 4, 476,566 ("Dent"). Applicant respectfully traverses this rejection for the following reasons.

Exemplary embodiments disclose methods and apparatus for selecting a hop channel for use in a channel hopping communication system. As recited in claim 1 for example, a method of selecting a hop channel for use in a channel hopping communication system that communicates over a physical channel and includes a sequence of hop channels comprising a set of forbidden hop channels and a remaining set of allowable hop channels comprises selecting a hop channel from the sequence as a function of a present phase. The selected hop channel is used for communication during the present phase if the selected hop channel belongs to the set of allowable hop channels.

If the selected hop channel belongs to the set of forbidden hop channels (i.e. if the selected hop channel does not belong to the set of allowable hop channels), a time-varying parameter is used to select, at the present phase, a substitute hop channel from the set of allowable hop channels, wherein the time-varying parameter is independent of conditions on the physical channel. The substitute hop channel is used for communication during the

present phase. A forbidden hop channel is mapped onto each of the allowable hop channels with equal probability.

Bergstrom describes a frequency hopping method for reducing the effect of narrowband jammers in communication between two stations (Abstract). A plurality of randomly generated fixed frequencies are made available for frequency hopping (col. 2, lines 6-8). Channel quality is tested in one of the fixed frequencies (a first frequency) and the results are used to determine whether to change the frequency of communication to a second frequency among the fixed frequencies (col. 2, lines 11-24). The second frequency is a mapping frequency (col. 2, lines 24-25). Previously prohibited frequencies in Bergstrom are made permissible (co. 3, lines 21-22).

Bergstrom fails to disclose, as recognized by the Office Action, using a time-varying parameter to select, at the present phase, a substitute hop channel or mapping a forbidden hop onto each of the allowable hop channels with equal probability.

Dent is relied upon for overcoming the deficiencies of Bergstrom. That is, Dent allegedly teaches the use of a time-varying parameter to select, at the present phase, a substitute hop channel and mapping a forbidden hop onto each of the allowable hop channels with equal probability.

Dent discloses only a portion of a frequency hopping selection mechanism. A hop set is defined as a subset of n carriers out of N available carriers. A data bit for each channel is set to 'one' if the channel is available and to 'zero' if the channel is unavailable (col. 3, lines 4-7). The available channels are referred to as a "hop set".

The system of Dent as described does not provide selection of a substitute channel. The channel selected for operation by Dent is always an available (or allowed) channel since the pointer only addresses the available channels. Dent fails to disclose a sequence where the slots to which the index is pointed to is not impacted if the slots correspond to allowed carriers and substituted if the slots correspond to forbidden carriers.

Dent, therefore, fails to disclose *using a time-varying parameter to select, at the present phase, a substitute hop channel* or *mapping a forbidden hop onto each of the allowable hop channels with equal probability.*

Dent discloses only the mapping from a pseudo-random number to an available (or allowed) channel. The pseudo-random number is provided by PN generators (not illustrated) that provide the initial value of counter 5 through leads 8.

Bergstrom and Dent fail to disclose exemplary embodiments as recited in claim 1. Therefore, claim 1 is allowable over the Bergstrom/Dent combination. Claim 16 is similarly allowable.

The remaining claims, all of which depend on one of allowable claims 1 and 16 and cite additional features are also allowable over the combination of Bergstrom and Dent relied upon in the Office Action.

All of the rejections having been overcome, it is respectfully submitted that this application is in condition for allowance a notice to that effect is earnestly solicited. Should the Examiner have any questions with respect to expediting the prosecution of this application, he is urged to contact the undersigned at the number listed below.

Respectfully submitted,

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